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The purpose of this study was to design a 60-item, forced-choice Q-sort to assess the body-image of high school girls. Two classes of high school girls enrolled at Ben L. Smith High School in Greensboro, North Carolina were interviewed concerning the perceptions they had about their own bodies. These responses were utilized in the construction of the original pool of one-hundred body-image statements. The statements were submitted to a seven member jury of experts for evaluation. The jury rated the 100 statements as to their appropriateness for measuring some specific aspect of body-image. Seventy-one statements were judged as acceptable by at least six of the judges. From these, sixty statements were chosen for inclusion in the final form of the body-image Q-sort.

The 60-item Q-sort was then administered to 162 eleventh and twelveth grade girls enrolled in the five public senior high schools of the Rockford Public Schools in Rockford, Illinois. Statement means, standard deviations, standard errors and range values were computed for each of the sixty statements of the Q-sort from the subjects' responses. Reliability was established for the instrument utilizing a test-retest method of correlation. Twenty pairs of scores were analyzed using a BMD 02D statistical computer program based on a Pearson Product Moment data formula. The reliability coefficient obtained for the instrument was .6927.

Validity was assessed for the instrument by comparing subjects' responses on the Q-sort with the same subjects' scores on the

Secord-Jourard Body-Cathexis Scale. Utilizing a BMD 02D statistical program, the resultant Pearson Product Moment correlation coefficient was .5609. Recommendations for further revision of the Q-sort were presented.

THE FORMULATION OF A Q-SORT TO ASSESS BODY-IMAGE OF HIGH SCHOOL GIRLS

by

Cynthia Ellen Wiese

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Approved by

Pearl Berlin
Thesis Adviser

APPROVAL PAGE

This thesis has been approved by the following committee of the Faculty of the Graduate School at The University of North Carolina at Greensboro.

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The writer is indebted to Miss Jessie Marie Lucas, Supervisor of Physical Education for the Rockford Public Schools of Rockford, Illinois for granting permission to conduct this study in the five public senior high schools in Rockford. Graditude is expressed to the Rockford physical education teachers for their cooperation and to the many students who participated in this study.

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CHAPTER I

INTRODUCTION

The present era is characterized by increased concern for the individual. Society seems to be placing greater value on the significance and worth of each person's particular distinctiveness. This is particularly evident in education. For example, students are encouraged to strive to learn more about themselves. The study of body-image, an integral part of the self-concept, offers the potential of obtaining a more complete understanding of the individual student and her behavior. Fisher writes, "All that you perceive, think, and believe occurs in the context of your body experience (1973, p. ix)." The feelings and view one has of oneself has a marked influence on behavior and the development of the individual personality. Schilder states,

> Bodies are after all not isolated entities. The body and the body image are always the body and the body image of a personality which expresses itself in the body. The body image is never an isolated part of our existence but is a part of every experience. The human personality is a personality with a body which expresses itself in the body image and only on the basis of the understanding of the body image can we understand the personality fully (Doudlah, 1962, p. 11).

Students' feelings are considered by those in positions of educational responsibility as they attempt to comprehend the needs and problems of students. Teachers are concerned with educating the

"whole" individual. The manifestation of this trend in schools today may be explained as an attempt to become more humanistic or person-oriented.

The writer believes that a positive body-image relates to the feelings one has of self-acceptance and self-confidence. It is further contended that everyone should be provided with the opportunities essential for attaining success through body experiences. Physical educators have both the privilege and the responsibility for structuring meaningful learning experiences which contribute to achieving successful utilization of the body in physical activity.

Admittedly, every individual will not have or be able to acquire a beautiful figure or an attractive personal appearance. Moreover, every student will not experience or acquire a high level of skill in all sports. Nonetheless, the concerned physical educator can help each student learn to accept her body with all of its strengths and weaknesses, perfections and flaws.

In order for young people to acquire realistic body-images of themselves, it is essential that they understand their own feelings about their bodies. Students need to be able to objectively rate themselves through the use of assessment tools that will help them consciously focus on their personal values, feelings, and perceptions. It has been noted for a long period of time that the evaluative process is a crucial and integral part of education. There is, however, a critical need for measurement instruments that reveal information about the affective concerns of physical education. Physical educators have sought to achieve positive affective outcomes as a part of learning since the early 1930's. Williams was one of the most vocal proponents

of character education through physical education. Oberteuffer (1963) stressed the instructional opportunities available for learning values through sport. Yet, measurement specialists in physical education have not been able to keep up with the explosive needs and trends brought about by recent humanistic education. Thus, teachers and students do not have ready access to reliable and valid affective measurement tools. The writer is particularly interested in this problem and was moved to contribute to the development of a new instrument, one which assesses body-image. It is the hope of the author that the body-image tool utilized in this research will be administratively feasible and practical for physical education teachers and provide a meaningful and interesting self-evaluative experience for students.

The physical educator is capable of aiding the student in acquiring an accurate, yet positive body-image. This can occur through instructional experiences. Such an objective is both an important goal and a timely one given the thrust of contemporary education. The cultivation of a positive body-image may lead to feelings of added self-confidence thus improving one's social behaviors and the ability to interact and be accepted by others.

Statement of the Problem

The purpose of this study is to design an objective evaluative instrument to assess the body-image of high school girls. More specifically, it seeks to test the hypothesis that a forced-choice Q-sort may be developed that yields a valid and reliable assessment of body-image for senior high school girls.

Definition of Terms

For the purpose of interpretation in this study the following meanings are assigned:

Body-image -- The personal view and feelings one has of one's body, including specific physical characteristics and general personal appearance; one aspect of the self-concept.

Q-sort -- An instrument which contains a set of self-reference statements which an individual rank orders on a continuum. The poles of the continuum range from "describes me best" through "describes me worst."

Trait-universe -- All of the characteristics of the body-image concept.

Assumptions

Two basic assumptions underlie this research. First, it is assumed that the factors underlying an individual's body-image can be measured through the ordering of self-reference statements. Secondly, it is assumed each individual has a unique sort which can be analyzed precisely and objectively because of the large number of choices represented in the trait-universe of body-image (Kerlinger, 1956, p. 289).

Scope of the Study

This study involves the construction of a 60-item Q-sort derived from responses of approximately thirty high girls enrolled at Smith High School in Greensboro, North Carolina. The final form of the Q-sort has been administered to 162 high school girls. (These subjects

were enrolled in the five public senior high schools of the Rockford Public Schools, Rockford, Illinois during the 1973-74 school year.) This study focuses specifically on body-image as previously defined and the development of the body-image Q-sort.

Significance of the Study

Information about body-image is a growing concern of high school physical educators and coaches who seek to provide meaningful experiences for their students. In the light of the present day societal and educational focus on the individual, this research is important because: (a) it has the capability of increasing a student's awareness of self; (b) it can yield a measure which would give teachers information for better understanding students as well as personalizing curricular experiences; (c) it can contribute to our knowledge about body-image and (d) the instrument developed in this study serves as an additional tool for measurement within the affective domain of physical education, a recognized area of interest.

CHAPTER II

REVIEW OF LITERATURE

Several body-image studies were reviewed but few of them were specifically concerned with the assessment of body-image of high school girls using either Q-technique or other psychometric tools. Much work, however, has been reported in developing Q-theory and body-image theory. These theories were basic to the proposed research. Body-image studies and Q-sort studies cited on the following pages were selected because they not only interested the writer but also had bearing on the problem under investigation.

Q-Theory and Methodology

Theoretical Considerations

Stephenson (1953), recognized as the creator of Q-theory and its methodology, began his work in June of 1935. In The Study of Behavior, he discussed the ideas underlying Q-theory and its procedures. He also presented examples of Q-methodology. Stephenson believed Q-technique expanded the possibilities for study of human behavior. He wrote:

> The new technique, we suggested, made it possible to make factor studies on a single or a few individuals, thus bringing the methods of correlation and factor analysis into the laboratory and clinic (1953:9).

Stephenson viewed Q-methodology as " ... a set of statistical, philosophy-of-science, and psychological principles, which, we believe, is such as is demanded by the present scientific situation in the psychological and social sciences (1953:1)."

Stephenson set forth a summary of quantitative principles comparing R and Q-technique. He presented nine Q-technique postulates within this summary which bear upon the present study. The postulates were:

i. The populations are groups of statements or the like.
ii. Each variate has reference to an operation of a single person upon all the statements in one interactional setting.
iii. The variates may interact in the one interactional setting.
iv. The transitory postulate has reference to intra-individual differences (such as significance).
v. Scores are reduced to standard scores with respect to each person-array.
vi. Scores are approximately normally distributed with respect to the person-array.
vii. All the important information for each array is contained in its variation (no information is lost in throwing away the variate means).
viii. The statements of a sample may interact.
ix. The concern is with dependency analysis (1953:58).

The population for the Q-sort is flexible and is determined in accordance with the nature of each individual inquiry in which it is utilized. Photographs and art objects may be used, rather than statements, as populations for Q-sorts.

Stephenson explained Q-technique in relation to Fisher's statistical methodology, factorial analysis, projective tests, the assessment of values and attitudes, self-concept studies, personality factors, and the general study of behavior.

Mowrer (1953) alledged that the term Q-technique, since 1935, has been "highly ambiguous, inexplicit, and confusing (1953:375)."

He further explained, "Contemporary researches in the field of personality, including those employing "Q-technique," show that we are moving rapidly toward the development of a true and valid statistics of the individual . . . (1953:375)."

Mowrer presented a description, history, and critique of Q-technique in his book, Psychotherapy -- Theory and Research. He identified Stephenson and Thomson as the main contributors to Q-theory. Mowrer also described O and P technique and compared R and Q techniques. He pointed out that Q is used for correlations between persons and R is used for correlations between tests.

Nunnally's (1970) psychological measurement text provided an introductory overview of Q-methodology. Q-sort was described as a method of obtaining comparative ratings rather than one which is absolute. Nunnally explained that Q-sort technique usually employs a fixed distribution which is like the standard normal bell-curve distribution. All the stimuli in a set, the statements or objects to be sorted, are designed from a common frame of reference. Nunnally wrote, "The Q-sort is used to measure individual differences in preferences for stimuli of different kinds (1970:458)." When comparative information is sought, the Q-sort technique is preferable over absolute ratings.

Wittenborn (1961) described fundamental aspects of Q-methodology and uses of Q-sort in counseling and therapeutic settings, which were common at the time of his writing. One consideration to which he called attention was the ability to use Q-technique with correlations between people as well as between different conditions for the same person. Q-method has permitted the study of an individual by means of analysis of variance of the statements sorted by the subject (1961:134).

Jones (1956) explained the formulation of the individual Q-sort statements in basic Q-technique. "The items Q-statements may be selected in a number of ways but in each case are presumed to sample randomly a previously defined 'trait universe' (1956:90)."

Kerlinger (1973) presented basic definitions for Q-methodology, Q-technique, and Q-sorts. Kerlinger also suggested several considerations for Q-sort design: (a) the rank-order continuum, (b) the number of cards in a Q-distribution, and (c) stability and reliability in sorts. He described various types of Q-sort: (a) unstructured, (b) one-way structured, and (c) two-way (factorial) structured Q-sorts. He discussed the uses of analysis of variance factor analysis, and factor arrays in Q-methodology. Kerlinger wrote, "One of the strong points of Q-methodology is its analytic possibilities (1973:592)."

Methodological Considerations

Kerlinger (1973) identified strengths and weaknesses of Q-methodology. He states, " . . . Q is a flexible and useful tool in the armamentarium of the psychological and educational investigator (1973:593)." Strengths cited include affinity to theory, the ability " . . . to test the effects of independent variables on complex dependent variables (1973:594)," and a usefulness in exploratory research. In addition, Q-sorting is interesting to people serving as subjects. Kerlinger presented and then refuted several criticisms of Q-methodology. Most of the criticisms were concerned with statistical considerations. In regard to forced choice format, Kerlinger pointed out,

> The important thing is to force individuals to make discriminations that they often will not make unless required to do so (1973:596).

From this, the writer discerned his preference for the forced-choice format.

Block (1956) compared the forced and unforced Q-sorting procedures. With the forced-choice format all subjects generate the same mean and standard deviation. Block, like Kerlinger, indicated "From a computational standpoint, forced-choice data are extremely convenient (1956: 481)." Block utilized Q with a variety of objects, Q-sets, and sorters. He found the forced-choice was more stable, i.e., provided greater reliability, and also produced more discriminations than the unforced Q-sort method. He concluded:

> In the various comparisons, the forced Q-sort method appeared equal or superior to the natural, unforced Q-sort method (1956:492).

Jones (1956) studied the distribution of Q-traits with respect to forced vs. unforced Q-sort method. Jones speculated that the forced choice format was adopted by many researchers because the format acted to reduce response sets and variance in the responses was automatically obtained (1956:90).

> It is also a procedure of some statistical convenience as the means and standard deviations of all Ss' distributions become automatically the same and thus greatly simplify computation of the product-moment correlations involved in each case (1956:90).

Jones administered only one Q-sort, the one developed by Butler and Haigh. His investigation was narrower in scope than most inquiries comparing the strengths and weaknesses of forced and open sort formats. On the basis of his study, Jones concluded, " . . . current forced-distribution procedures result in a significant loss of information which may be retained by use of 'free-sort' procedures . . . (1956: 94)."

Another important methodological aspect of Q-technique that must be considered is the problem of social desirability and its subsequent influence on subjects' responses to projective tests. The writer was specifically interested in studies which considered the phenomenon of social desirability in Q-sort response.

Webber (1970) compared social desirability and achievement motivation of varsity crew and lacrosse players at the University of Massachusetts. Social desirability and achievement motivation were studied with respect to the Plummer (1969) Q-sort. "Two separate treatments of Plummer's sixty statement Q-sort, one for achievement motivation and the other for social desirability, were administered (1970:68)." The athletes ranked the statements in a self descriptive context during the achievement motivation administration and in a socially acceptable or desirable context in the other administration. "Mean scores for each statement were calculated for each treatment and were then compared using the Wilcoxon matched pairs-signed rank test (1970:68)." No statistically significant difference was found between the sort for social desirability and the sort for achievement motivation.

The influence of the concept of social desirability on subjects' answers in projective tests has been described in several studies by Edwards. Edwards wrote, "There is a rather common suspicion among many psychologists that subjects tend to give what are considered to be socially desirable responses to items in personality inventories (1953:90)." Edwards was able to hypothesize following additional research that:

> . . . the probability of endorsement of an item in a personality inventory was an increasing linear function of the social desirability scale values of the items (1955:462).

Edwards corrected for contamination by social desirability in the construction of the Edwards Personal Preference Schedule through pairing items descriptive of different traits but having similar social desirability values.

Social desirability has been used to explain the large variance between the actual behavior of subjects and their predicted behavior as assessed by affective measurements tools (Edwards, 1970). Whether individuals are conditioned in their responses or feel they should choose socially acceptable item behaviors has yet to be determined.

Q-sort Studies

Selected Literature From Psychology

Kerlinger (1956) studied the educational attitudes of professors and laymen. Twenty-five subjects participated in the study. The subjects were eight education professors, ten liberal arts professors,

six outside people and one university administrator. Kerlinger developed a sort of 80 cards. "The 80 statements were selected from a 'population' of about 250 statements . . . (1956:296)." Kerlinger had two broad attitude catagories, restrictive-traditional and permissive-progressive. He also had four area catagories: teaching-subject matter-curriculum, normative-social, interpersonal relations, and authority discipline. The analysis of data was done by a factorial analysis of variance with a total of 79 degrees of freedom.

Kerlinger concluded that the education professors and most of the liberal arts professors had high Permissive F-ratios. "But people outside the university are apparently very different from professors in educational attitudes (1956:322)." " . . . it appears that laymen may have a tendency toward a traditional outlook on education (1956: 322)."

Storey (1967) developed a Q-sort to assess the self-concepts of selected elementary school children in the Calgary, Alberta area of Canada. The subjects were divided into three groups: accelerates, potential accelerates and decelerates. The accelerates and potential accelerates were described as " . . . children of superior mental, physical, social and emotional development whose school achievement places them in the top ten percent of their group . . . (1967:135)." The decelerates were academically at the opposite end of the spectrum. The study was cross-sectional rather than longitudinal in design.

Storey termed his instrument "Q-tags." It involved a forced-choice format similar to that used by Block and by Stephenson. The Q-tags instrument contained fifty-four items sub-divided into six

personality factors. The six factors were affective, effective, assertive, social, reverie, and hostility.

Storey correlated the subjects' self-concept and ideal-self perceptions. Between group factor loadings were computed. He found no significant differences between the accelerates and potential accelerates among any of the six personality factors. Significant differences at the .01 level were found between the accelerates and the decelerates and between the potential accelerates and the decelerates in five of the six factors. The social factor demonstrated no difference between any of the groups. The decelerates were described as being more emotional, hostile and given to day-dreaming and less assertive and effective than the accelerates and potential accelerates.

Rogers (1954), Dosajh (1970), and Shontz (1969) all used Q-sorts in their research to investigate the effects of counseling or psychotherapy upon some of their clients. Rogers used a deck of 60 statements in which a number of statements were specifically framed to include the personal problems of given patients. Rogers and Dosajh concluded in separate studies that the self, ideal-self disparities lessened as progress was made in the counseling or therapy. Shontz used Q-sorts to examine the concept of a healthy personality. Shontz was interested in specific traits that contributed to having a healthy personality.

In an anthropological study, Kemnitzer (1973) developed a Q-sort to measure the value conflict in the acculturation of a group of Dakota Indian men and women who moved to the San Francisco Bay Area

to work and live. The subjects (N=42) sorted thirty-six value statements, first according to their personal idealistic beliefs and then according to their perceptions of what was expected of them in the city (1973:690). In addition, case studies were done on selected Indian families and observed behavior was compared to the self-report information received by the Q-sort administration.

Kemnitzer concluded that the subjects had serious value conflicts; there were several differences between what the subjects' valued and what they perceived society valued and expected from them. Disparity existed between observed behavior and reported valued behavior. Kemnitzer stated, "The problem of reducing dissonance is doubly hard for individuals attempting to adjust to new cultural patterns, because of the necessity to reduce dissonance between native and adopted identities and forced (expected) behavior (1973:705)."

Morsh (1955) devised a Q-sort to assess teacher effectiveness. Morsh made use of a trait universe composed of items descriptive of student opinion of teacher effectiveness.

> This list of items, . . . probably represents the largest and best validated and scaled set of raw material for the construction of rating scales for teachers. This list was comprised of 900 phrases which had been selected from essays describing 'good' and 'bad' teachers written by students in classes in educational psychology (1955:391).

Morsh developed a 30-item, forced-choice Q-sort that employed a nine point continuum. He identified three uses for his instrument:

1) Instructors may be readily compared in terms of student opinion.
2) Variability of student opinion within a class and from class to class is clearly discernible.
3) The supervisor may use the same form in rating an instructor. His expressed opinion may thus easily be compared with that of the students (1955:394).

Morsh did not publish his 30-item Q-sort. Rather, Q-sort format was utilized as a means of developing a rating scale. No real-ideal correlations were made because the tool was not a self-reference scale.

Selected Literature From Physical Education

Doudlah (1962) studied the relationship between self-concept, body-image and movement concept in college women with low or average motor ability. As a part of this classic study, she constructed three, 75-item forced-choice, Q-sort scales to measure self-concept, body-image, and movement concept. The subjects (N=40) were freshmen women at the University of North Carolina at Greensboro. Motor ability was assessed through the use of the Scott Motor Ability Test.

Doudlah concluded that there was a relationship between self-concept and body-image and between body-image and movement concept. The subjects in the average motor ability group had higher movement concept scores than the low motor ability group that were statistically significant at the .01 level of confidence. There were no significant differences in self-concept or body-image scores for the low and average motor ability groups.

In another inquiry undertaken at the University of North Carolina at Greensboro, Stroble (1964) studied the relationships among eleven physical fitness and personality variables in twelve physical education

majors with a low level of physical fitness. One of the personality variables was body-image. Stroble used the Doudlah Body-Image Q-sort scale to assess the body-image of her subjects.

The twelve subjects began a thirty day conditioning program. The Iowa Physical Fitness Test, Doudlah's Self-Concept, Body-Image and Movement Concept Q-sorts, and the Edwards Personal Preference Schedule were administered prior to and following the conditioning program. The subjects' body-images improved and this change was statistically significant at the .01 level.

Nation (1963) employed the Doudlah Movement Concept Q-sort in her research. She assessed and compared the movement concepts of fifty-five students enrolled in experimental body mechanics, swimming and fencing classes at the University of North Carolina at Greensboro. The experimental classes were taught by the same instructor. Nation found no significant differences in movement concept between the three groups of students. Significant differences were found, however, between the first and second administrations of the sort in the swimming and fencing classes. No significant change in the movement concepts of the body mechanics students occurred. Nation concluded that " . . . of the three groups, the swimming class made the greatest change in movement following five weeks of instruction and activity (1963:38)."

Richardson (1967) investigated the movement concept of college women enrolled in two beginning gymnastics classes. The Doudlah Movement Concept Q-sort was administered to both classes at the beginning and the end of eleven weeks of instruction. One class was

taught utilizing a problem-solving (movement education) approach and the other received teacher-directed instruction, considered to be the traditional approach. A statistically significant change was reported between the initial and the final movement concept scores for the class that was taught with the problem-solving approach. Richardson concluded that the movement education approach to gymnastics narrowed the discrepancy between the real self and the ideal self (1967:74).

Nelson (1966) investigated the relationship between motor ability, real self-concept and ideal self-concept of eighth grade girls. The subjects (N=80) were enrolled at the Edwin O. Smith School of the University of Connecticut. The Doudlah Self-Concept Q-sort and the Scott Motor Ability Test were the tools utilized in this study. Subjects were classified into low, average, and high motor ability groupings. The motor ability scores significantly improved for the average group following a seven week unit in basketball. The average and high motor ability groups also had a significant change in their self-concepts following the seven week instructional unit. A statistical analysis indicated the motor ability score of the subjects was not related to self-concept.

Gordon (1973) designed an instrument to assess the movement concept of junior high school students. Standard Q-sort technique requiring the subject to rank order sixty to one hundred twenty statements along an eleven point continuum was deemed inappropriate for use with junior high school students. She utilized a modified Q-sort technique in her research. The final instrument consisted of thirty

movement concept statements. The subjects were asked to respond to each statement on a two point continuum. The statements were judged by the subjects to be either "like me" or "not like me." Validity for the movement concept scale was established by a jury of experts. The test reliability was reported to be .8984 as determined by a test-retest correlation.

Plummer (1969) constructed a forced-choice Q-sort to assess achievement motivation of male athletes. One hundred statements related to achievement motivation were devised. The statements were submitted to a five-member jury and evaluated with respect to their relevancy to the achievement motivation concept. From the judges' responses, a final instrument consisting of sixty Q-sort statements was developed. The subjects for the study were college male athletes who participated in baseball and gymnastics. Plummer found no significant differences in achievement motivation between the baseball players and the gymnasts as measured by the Q-sort.

Berlin (1971) studied the motives of college women athletes to engage in intercollegiate sports. Four competitive sport experiences were hypothesized by Berlin as "pervasive motives" or reasons the women chose to participate in intercollegiate sports. These were: (a) contributions to self-regard, (b) opportunity for social interaction, (c) attainment of mastery of skills, and (d) expression of attitudes, feelings, and interests (1971:1). Berlin employed Q-technique in designing her study. A sixteen cell hypothetical model was developed which accounted for the four motive catagories, two behavioral dispositions: positive and negative affects, and two descriptive modes of

behavior: general behavior and behavior considered to be specific to sport. Berlin devised an 80-item, forced-choice Q-sort. Twenty items were developed for each of the four motive catagories. Ten items were stated positively and ten items were stated negatively for each motive catagory. Ten items referred to general experiences and ten items referred to specific sport-oriented situations. Berlin administered her sort to women collegiate athletes enrolled in seven private colleges and state universities in New England. Factor analysis of the obtained data led to the identification of five factors which were described as " . . . essential to the theoretical explanation of women athletes motives to engage in competitive sport (1971:9)." These factors were:

1. the experience of stress
2. the maneuvering for accomplishment
3. the gratification of role interests
4. the consequences of affiliation
5. the satisfaction of adjustment and recognition (1971:14)

Berlin concluded from analysis of variance that three pervasive motives existed rather than four as the model initially suggested. The expression and social interaction motives were combined into one motive catagory for the next phase of her study. The sort was shortened to 60 statements. The study was considered exploratory and seeded subsequent research using Q-method.

Smith (1975) continued Berlin's original work by further testing the motivational explanation of women collegiate athletes to compete in intercollegiate sport. The subjects for the study (N=224) were enrolled in twelve colleges and universities and competed in seven

different intercollegiate sports. Athletes responded to the modified 60-item, forced-choice, structured Q-sort developed by Berlin. The sort responses were factor analyzed using a principal components technique.

Smith identified fifteen factors as essential to the structure of collegiate women athletes' motives to engage in competitive sport. These were: (a) commitment to goals, (b) coping with failure, (c) skill-related adjustment, (d) responsiveness to pressure, (e) self-confidence, (f) sociability, (g) release, (h) ego-gratification, (i) belongingness, (j) anxiousness, (k) adventure, (1) self-interest, (m) effectiveness, (n) social accommodation, and (o) conflict adaption. The results of the study supported the horizontal structure of Berlin's model but invalidated the vertical structure.

Berlin (1972) also studied the pre and post-season motivations of women gymnasts. This study also used data gathered by Q-sorting.

> The investigation sought to compare pre and post-season Q-sort responses of two women's collegiate gymnastic teams. A second purpose was to ascertain (women) gymnasts needs to achieve scores on the Lynn Questionnaire (1972:1).

The gymnasts responded to the 80-item sort previously developed by Berlin. Results of an analysis of variance revealed no significant difference between the gymnasts pre and post-season sort responses. Berlin interpreted this as indicating " . . . that the motives of collegiate women gymnasts are relatively stable (1972:5)."

Body-Image Theory

History of the Body-Image Concept

Schilder (1935), a former research professor of psychiatry at New York University, was a pioneer in the identification of key body-image phenomena and the explanation of the concept of body-image. Schilder hypothesized that a human's body-image consisted of three major components: (a) a physiological basis, (b) a libidinous structure or psychological basis and (c) a sociological basis.

Schilder described body-image as follows. "The image of the human body means the picture of our own body which we form in our mind, that is to say the way in which the body appears to ourselves (1935:11)."

Several psycho-physiological phenomena were studied by Schilder. Posture, tactile and optic impressions, muscle-tone, the image of the face, body weight, pain, the phantom limb and the imperception of body parts were presented in-depth. Schilder cited several clinical case studies to illustrate the psychological components of body-image. Psychic phenomena which adversely affected an individual's body-image were analyzed. Such conditions as narcissism, depersonalization, hypochondria, conversion, and organic disease were described in relation to their influence upon the body-image of individuals. Beauty, body space, and social relations were described as important sociological components of body-image.

Schilder believed one's personal body-image could be altered in a positive manner through participation in gymnastics and dance. Being able to express oneself through movement was given a strong emphasis

in Schilder's writing. Changing one's clothing or wardrobe was also cited as beneficial in the alteration of a negative personal body-image.

Secord and Jourard (1953) were among the first psychologists to be interested in the appraisal of body-image. Prior to their often-cited article, research psychologists and psychiatrists were primarily interested in defining and investigating the myriad of phenomena associated with the body-image concept. Secord and Jourard developed a forty-six item body-cathexis scale. Body-cathexis was defined as " . . . the degree of feeling of satisfaction or dissatisfaction with the various parts or processes of the body (1953:343)." The concept was further described as being integrally related to the self-concept although identifiable as a separate entity.

The scale employed a five-point Likert technique for scoring subjects' responses. The subjects for the study were 70 college men and 56 college women. The subjects described the degree of satisfaction/dissatisfaction they had for each of the 46 body parts and bodily functions listed on the scale. See Appendix C for a copy of the Secord-Jourard Body-Cathexis scale. The split-halves reliability for the Body-Cathexis scale was established as .81. A self-cathexis scale and a homonym test of body-cathexis developed by the authors along with the Maslow Test of Psychological Security-Insecurity were administered to another group of subjects (N=46) to determine the relationship between body-cathexis and other selected personality variables. Secord and Jourard concluded: (a) feelings about the body are commensurate with feelings about the self, (b) low body-cathexis is associated

with anxiety in the form of undue autistic concern with pain, disease, or bodily injury and (c) low body-cathexis is associated with insecurity (1953:347).

Fisher and Cleveland (1958) began their partnership of the scholarly investigation of body-image phenomena in the early 1950's. Fisher and Cleveland defined body-image in this manner:

> Body-image is a term which refers to the body as a psychological experience, and focuses on the individual's feelings and attitudes toward his body. It is concerned with the individual's subjective experiences with his body and the manner in which he has organized these experiences (1958:x).

Fisher and Cleveland were among the first to study such phenomena as the phantom limb of amputees and the role of body-image in neuroses and psychoses. An individual's body-image is influenced by group behavior, family patterns, sex and cultural differences as well as personal experience. One of the major contributions Fisher and Cleveland made is their explanation and appraisal of body-image boundaries. These scientists developed the Fisher-Cleveland Barrier Index scale to assess individuals' body-image boundaries. Individuals with high barrier scores were described as being independent and having definite standards, goals and ways of approaching tasks. These individuals were also considered capable of shaping the environment to their needs and were successful in handling stressful situations (1958:117).

Current Theories of Body-Image

Fisher has continued his prolific writing and research. He has achieved recognition as a noted scholar of body-image. In Body Experience in Fantasy and Behavior (1970) Fisher reviewed current research about body-image. Much of this has been concerned with comparing individuals' body perceptions with personality or trait variables. Research findings in general supported the following observations: (a) large body segments and large overall body size is associated with masculinity and that which is small is linked with femininity; (b) failure or the sense of depreciation tended to result in feelings of smallness; (c) men who were particularly competitive with women tended to overestimate their height; and (d) body parts in the region of the lower extremities were underestimated while those in the head region were frequently overestimated (1970:49).

Fisher (1972) reported that people experience their bodies more intensely than any other objects in the environment. People have always been fascinated with looking at themselves in mirrors and photographs. Individuals have been concerned about the impression their bodies make on others. Preoccupation with expensive clothing to camouflage the body illustrates this idea (1972:27). Societal pressure was considered by Fisher as a deterrent to healthy awareness of one's own body. Fisher (1973) stated that people are what they feel. Body consciousness was described as a necessary part of healthy psychological development.

Body-Image Studies

Selected Literature From Psychology

Gellert, Girgus, and Cohen (1971) studied the body-image of 69 girls and 97 boys in New York City. The children were white, physiologically normal and ranged in age from 5.4 to 12.8 years of age.

> . . . the principal aim of this study was to explore children's awareness of their bodily appearance. The basic criterion used for measuring such awareness was that of self-recognition when S's photograph was presented together with those of others (1971:113).

Each child was photographed in a standard tank type bathing suit. All jewelry was removed prior to being photographed. Each child posed three times for an anterior shot, side, and posterior shot. For each task the subject performed, the subject was to select himself from a set of eight photographs having the same profile and same sex as the subject. Three tasks were performed by the subjects. Task I involved self-recognition with the heads of the subjects in the photographs obscured. Task II involved self-recognition with selected, markedly disparate body shapes. Task III involved self-recognition with the heads visible in the photographs.

When head portions were " . . . visible, self-recognition was perfect from anterior and nearly so from side views (1971:166)." Task III was the easiest for the subjects. When heads were covered, self-recognition was significantly more accurate than would occur by chance. There were no significant sex differences.

> Perhaps the most striking finding of the present study was that children were much more familiar with their bodily appearance than had been anticipated (1971:154).

Nathan (1973) compared the body-image of thirty-six obese children and thirty-six average weight children. There were twelve 7, 10 and 13 year olds in each of the two groups. The obese and nonobese children were asked to make drawings of one male and one female figure. The drawings were blind scored utilizing the Goodenough-Harris Method. The more accurate, detailed and sexually differentiated the drawing, the higher the score given to the drawing (1973:457). A three way analysis of variance was calculated with weight, sex and age as the independent variables. The drawings done by the obese children were significantly less detailed and less differentiated than the drawings done by the nonobese children. These findings were significant at the .001 level. There were no significant sex differences between or within the two sample groups. There were significant age differences with performance increasing with age for both the obese and nonobese children. Nathan wrote, "Even the poorest drawings of the control nonobese children differentiated male and female figures by facial features, and bodily and clothing shapes (1973:457)." She further stated,

> "The poor figure drawings submitted by obese children offer empirical evidence that these children have more undifferentiated, immature body images than their non-obese peers (1973: 462).

Nathan concluded that chronically obese children need more than dieting in their treatment programs. Self-confident, active, independent and assertive behavior need to be stressed in treatment programs with weight loss as a secondary goal (1973:462).

Castelnuovo-Tedesco (1973) studied body-image and psychotic reactions in individuals who had received organ transplants. He wrote, "Until recently our knowledge of body-image disturbances was mainly based on changes in the exterior of the body, and on congenital or acquired discontinuities of the external anatomy, as in cases of amputation or congenital aplasia (1973:349)." Body-image disturbances occurring in postoperative organ transplant patients were described as being unique from those of other types of surgery. Traditional surgical intervention removes a diseased organ or limb and the patient must cope with this loss. With a transplant operation " . . . something is added and the individual must make room for this addition so that something which previously was nonego may come to be felt as part of the ego (1973:359-360)." Massive anxiety, reactive and severe depression, inappropriate euphoria, and guilt concerning taking an organ that did not "rightfully" belong to the patient were discussed as common psychological adjustment problems. Castelnuovo-Tedesco stated, " . . . some male patients receiving a woman's heart feel that they now have a woman inside, that they are becoming feminized (1973:357)." He summarized, "The patient commonly finds it difficult to regard the transplanted organ as a part of his own body (1973:361)."

Selected Literature From Physical Education

Schultz (1961) studied the relationship between body-image and physical performance of 10th and 11th grade girls. The subjects (N=64) were administered a four-item physical performance test. The test had a balance item, an obstacle race, a wall pass item, and a standing broad jump. The Draw a Person test (DAP) and a Semantic Differential Test (SDT) were administered to the 16 highest and 15 lowest scorers from the physical performance test. The Semantic Differential Test had 21 pairs of polar adjectives that were used to describe "My Body" and "I Wish That My Body" personal concepts.

Significant differences were found between the means of the high and low performance groups on the SDT_1 (My Body) and the DAP. Schultz concluded there was a definite relationship between body-image as measured by the SDT and the DAP and physical performance for her sample.

Nelson (1967) investigated the relationship between four selected aspects of self-actualization, body-cathexis, self-cathexis, motor creativity, and movement concept. The Personal Orientation Inventory developed by Shostrom was utilized to measure the four aspects of self-actualization which included spontaneity, self-acceptance, self-regard, and inner-directedness. Other instruments employed for use in the study included the Secord-Jourard Body-Cathexis and Self-Cathexis scales, the Wyrick Motor Creativity Test, and a modified scale version of Doudlah's Movement Concept Q-sort. The final sample (N=79) were freshman college women enrolled in physical education classes at the University of Michigan.

Nelson concluded there was a significant relationship between the four self-actualization variables. In addition, movement concept, body-cathexis, and self-cathexis scores were significantly related and tended to vary in the same direction and with similar intensity for the subjects. Motor creativity was not found to relate to any of the other variables.

Leaverton (1970) researched the relationship between body awareness and the ability of seventh, eighth and ninth grade girls to perform two gross motor tasks. Two instruments were utilized to assess body awareness. The Body Prominence Test measured the awareness of each subject's body within his own perceptual field or environment. The Body Focus Questionnaire measured the subjects' awareness of two body areas: the arm and the leg areas (1970:43). The two gross motor tasks included kicking a ball into a target and hitting a ball into a target. Leaverton concluded: (a) there was no significant effect of degree of total body awareness or grade level upon the performance of the hitting and kicking tasks, (b) there was no significant effect of arm or leg awareness upon the hitting performance task and (c) subjects who possessed a high degree of leg awareness but little arm awareness and vice versa performed best on the kicking task (1970:44).

Vincent and Dorsey (1968) sought to determine the relationships between three selected measures of body-image and two measures of physiological performance. The body-image phenomena examined were body-image boundary as measured by the Fisher-Cleveland Barrier Index, bodily concern as measured by the Secord Homonym Test, and body-cathexis as measured by the Secord-Jourard Body-Cathexis Questionnaire.

Physiological performance was tested through the use of dominant grip strength measurement and scores on the Michael-Gallon revision of the Harvard Step Test. The subjects who participated in this study were fifty male students selected from general education classes at San Fernando Valley State College. Pearson r's were calculated for six pairings of correlation between different variables. The investigators summarized that in general the body image measures were not significantly related to physiological variables. One pairing was found to be significantly related at the .05 level. This pairing was the Homonym Test and grip strength scores.

Vail (1970) studied the relationships among self-concept, body-image and the learning and retention of two novel motor skills. Vail developed a self-concept scale which assessed subjects' feelings about paired descriptive antonyms. Test-retest reliability for the instrument was reported as .74. This value was considered sufficient for group comparisons. A ball toss item and a hop and placement task were selected as the two novel skills for utilization in the study. Body-image was assessed by two techniques. The subjects responded to the Revised Body Image Objective Rating Scale. Each subject was asked to consider her various body segments and to rate the size of her body parts on a three point continuum as either smaller than average, average, or larger than average. "One front and one lateral view photograph of each individual were used to determine actual body size (1970:31)." Each of the body segments that was included on the Revised Body Image Objective Rating Scale was evaluated on the individual photographs as smaller than average, average, or larger

than average. "Body image accuracy scores were determined by comparing the subjects' responses to the rating scale with the picture evaluation (1970:32)." Vail reported her subjects had generally average figures. Close to one-half of the subjects' evaluations of their body segments were incorrect. When the subjects made incorrect assessments, they tended to overestimate their body size. Vail concluded from the results of her study that there was no relationship between self-concept and body-image accuracy scores.

Bedford (1971) investigated the relationship of body cathexis and motor performance in junior high school girls of three ethnic groups. The subjects (N=117) were black, white, and Mexican-American students enrolled in Mann Junior High School in Abilene, Texas. The Secord-Jourard Body-Cathexis scale and the Scott Motor Ability test were utilized to assess body cathexis and motor performance. Bedford found no significant relationship between body cathexis and motor performance. The ethnic groups did not differ significantly in regard to body cathexis. Black students participating in this study were found to be superior to white and Mexican-American students in motor ability performance.

Shochat (1970) studied the relationship between eight specified personality traits and body-cathexis. The subjects for the study (N=704) were male high school senior athletes and non-athletes from five western Massachusetts class AA high schools. The Secord-Jourard Body-Cathexis scale was administered to assess body-cathexis. The Gordon Personal Profile was utilized to measure the personality traits of ascendancy, responsibility, emotional stability, and

sociability. The Gordon Personal Inventory assessed the personality traits of cautiousness, original thinking, personal relations, and vigor. Shochat also developed a personal data form to obtain essential background information about each subject.

The subjects for Shochat's study were sub-grouped to facilitate the analysis of data. The athletes were classified as fall varsity athletes, winter-spring varsity athletes, fall intramural athletes and winter-spring intramural athletes. The non-athletes were put in two groups depending upon their competitive sport experiences (if any) outside of school. Shochat concluded from his results that there were no significant differences in Body-Cathexis among the varsity, intramural and non-athletes. Significant positive correlations occurred between body-cathexis and sociability, ascendancy, and vigor for several of the treatment groups.

Summary

The chapter reviewed the theories and methodologies underlying Q-technique and body-image. The literature reveals that psychologists and physical educators have widely used Q-method as a means for studying achievement motivation, educational attitudes, value conflict, teacher effectiveness, self-concept, body-image and movement-concept.

Schilder described body-image as having three major components: (a) a physiological basis, (b) a psychological basis and (c) a sociological basis. Physical educators have been concerned about all three components of body-image. Recently, there has been particular interest in the relationship between body-image and selected variables such as

self-concept, movement-concept and physical performance. Few tools were reported which were specifically designed to assess body-image. The need for development of new body-image instruments was substantiated by the review of literature.

CHAPTER III

PROCEDURES

This study assessed body-image of selected high school girls. Following the formulation of the problem and a review of the related literature, several procedures were carried out as a part of the research.

Selection of the Tool

The Q-sort is an instrument comprised of self-reference statements which the subject rank orders on a continuum. A forced-choice Q-sort was selected as the technique for measurement of body-image. This tool was chosen for three reasons. First, the interpretation of the Q-sort statements is left to the subject. The test constructor or administrator does not make value judgments on the items and impose those judgments on the subject (Doudlah, 1962, p. 18). Secondly, there is inherent value in the self-evaluative, sorting experience. As Kerlinger pointed out,

> The important thing is to force individuals to make discriminations that they often will not make unless required to do so (1973:596).

The subjects, consciously or unconsciously, weigh personal values and priorities and make choices while arranging the statements. Thirdly, "Q-sorts insure statistical inter-sorter comparability of data, since all sortings conform to the same distribution and thus have the same mean and standard deviation (Plummer, 1969, p. 16)."

The Q-sort developed for use in this study employed a nine-point continuum. The headings for the points on the continuum ranged from "describes me best" through "describes me worst." The forced-choice format of the Q-sort approximated a normal curve of distribution. The sixty statements were arranged along the nine-point continuum in a 2-5-7-9-14-9-7-5-2 design. The two statements at the extremes of the design represented the "best" and "worst" statements. Five response possibilities were set next to each extreme. Those response catagories represented the "describes me very well" and "describes me very poorly" portion of the answer sheet. The seven item catagories were the "describes me well" and "describes me poorly" columns. Fourteen response possibilities existed in the middle of the continuum which was represented by the phrase "somewhat like me." A copy of the answer sheet may be found in the Appendix.

Selection of the Subjects

The subjects of this investigation were 162 eleventh and twelveth grade girls enrolled in the five public senior high schools of the Rockford Public Schools in Rockford, Illinois during the 1973-74 academic year. The sample of 162 girls was drawn from physical education classes from each of the five senior high schools. The researcher's prior association with the Rockford Public Schools allowed access to professional personnel in physical education who were interested in the study. Permission to conduct the study was secured from the city's Supervisor of Physical Education and full cooperation was extended in making subjects available for data gathering.

Construction of the Q-sort

Development of the Statements

The first step in constructing the body-image Q-sort was developing a pool of self-reference statements. Theoretically, such a pool represented the trait-universe of body-image. The writer was particularly concerned with devising statements that were truly indicative of the interests and feelings today's high school girls have about their bodies. In order to satisfy this concern, the investigator visited Ben L. Smith High School in Greensboro, North Carolina, and talked with female students enrolled in two physical education classes.

The high school students who participated in providing a pool of statements, from which the sort was ultimately developed, were asked to respond, in writing, to several questions. These were: What body part or characteristic do you like the most? What body parts are you generally satisfied with? What aspect of your body would you most like to change? What body part or characteristic are you the least satisfied? What body parts are you generally unsatisfied with? The students were requested to respond to these questions in complete sentences rather than in one or two words. Four by six inch lined index cards were provided for this purpose.

The obtained responses were used to construct seventy of the original one hundred body-image statements. In addition, body-image scales published in the psychological and physical education literature were studied. Five statements were adapted from previously constructed scales. The remaining twenty-five statements included in the original sort were composed by the writer.

Determining Validity

Validity was established for the instrument in two steps. First, the initial one hundred body-image statements were submitted for evaluation to a seven member jury. These experts were directed to judge the appropriateness of each statement for describing some specific aspect of the body-image concept. Three faculty members at the University of North Carolina at Greensboro and four high school teachers made up the jury. The three college professors included a physical educator, a psychologist, and a health educator. The four high school teachers were three physical educators and one English teacher. Five women and two men comprised the jury. The judges were selected by the researcher on the basis of their professional specialization and their understanding of the concept of body-image. A listing of the jury members is presented in the Appendix.

Each jury member, after agreeing to participate in the evaluation of the statements, was provided with a set of the original pool of one hundred statements and a sheet of directions for rating the statements. See the Appendix for these forms. No time limit was set for the judging of the appropriateness of the statements. The writer collected the returns from the seven judges within two weeks.

The statements were rated on a three point scale. Each statement was marked as acceptable, unacceptable, or undecided. A statement was retained for final selection if six out of the seven jurists rated the statement as acceptable. Seventy-one of the original one hundred statements were found acceptable by six out of seven jurists. The results of the jury rating are presented in Table 1.

TABLE 1

JURY RESULTS IN ASSESSING THE DEGREE TO WHICH EACH Q-SORT STATEMENT REPRESENTED BODY-IMAGE

Statement Number	Acceptable	Unacceptable	Undecided	
1	7	0	0	*
2	7	0	0	*
3	7	0	0	*
4	7	0	0	*
5	7	0	0	*
6	7	0	0	*
7	6	1	0	*
8	6	1	0	*
9	7	0	0	*
10	7	0	0	
11	6	1	0	*
12	6	0	1	*
13	7	0	0	*
14	7	0	0	*
15	6	1	0	*
16	7	0	0	*
17	7	0	0	*
18	5	1	1	
19	4	0	3	
20	6	1	0	*

* = retained in the final sort.

TABLE 1. (continued)

Statement Number	Acceptable	Unacceptable	Undecided	
21	2	5	0	
22	6	1	0	
23	7	0	0	*
24	4	1	2	
25	7	0	0	*
26	2	4	1	
27	6	1	0	*
28	7	0	0	*
29	3	3	1	
30	7	0	0	*
31	4	2	1	
32	6	1	0	*
33	6	1	0	*
34	7	0	0	*
35	7	0	0	*
36	5	2	0	
37	6	1	0	*
38	3	2	2	
39	5	2	0	
40	7	0	0	*
41	7	0	0	*
42	7	0	0	*
43	6	1	0	*

TABLE 1. (continued)

Statement Number	Acceptable	Unacceptable	Undecided	
44	6	1	0	*
45	7	0	0	*
46	5	2	0	
47	7	0	0	*
48	2	3	2	
49	7	0	0	*
50	7	0	0	*
51	7	0	0	*
52	6	1	0	
53	7	0	0	*
54	7	0	0	
55	7	0	0	*
56	6	1	0	
57	6	1	0	*
58	7	0	0	*
59	6	1	0	
60	5	1	1	
61	7	0	0	*
62	6	1	0	
63	7	0	0	*
64	7	0	0	*
65	6	1	0	*
66	7	0	0	*

TABLE 1. (continued)

Statement Number	Acceptable	Unacceptable	Undecided	
67	2	4	1	
68	5	1	1	
69	7	0	0	*
70	7	0	0	
71	5	2	0	
72	7	0	0	*
73	3	4	0	
74	3	4	0	
75	6	1	0	
76	5	2	0	
77	6	1	0	
78	2	5	0	
79	7	0	0	*
80	4	3	0	
81	4	3	0	
82	7	0	0	
83	3	3	1	
84	6	1	0	*
85	6	1	0	*
86	5	2	0	
87	3	4	0	
88	7	0	0	*
89	7	0	0	*

TABLE 1. (continued)

Statement Number	Acceptable	Unacceptable	Undecided	
90	4	3	0	
91	6	0	1	*
92	4	1	2	
93	5	2	0	
94	7	0	0	*
95	7	0	0	*
96	6	1	0	
97	5	2	0	
98	6	1	0	*
99	6	1	0	*
100	6	0	1	*

Sixty statements were chosen for retention in the final form of the Q-sort. An effort was made, in this step of the sort construction, to adequately represent the body-image trait-universe. For example, the writer tried to avoid too many statements describing the arms and legs or too few statements describing the head and facial features. The original set of one hundred body-image statements and the final set of sixty statements are presented in the Appendix.

The second validation procedure compared the performance of subjects on the body-image Q-sort with that of another measure of body-image that has been used extensively in physical education and psychological research. The Secord-Jourard Body-Cathexis Scale was chosen to validate the instrument developed in this study. Content validity was established for the instrument during this second step. A sub-sample of forty-four subjects was utilized in this comparison. Three classes of students from two high schools within the research population were randomly selected to participate in this validation procedure.

The rationale for comparing the performance of the sub-sample on the body-image Q-sort and the Secord-Jourard Body-Cathexis Scale was to obtain an objective measure, expressed in the terms of a correlation, between the sort and an external criterion. It was believed that if the Q-sort were valid, the distinction between real and ideal sorts would yield results that were consistent with body-image as measured by the Secord-Jourard instrument. Therefore, for the validity sub-sample, subjects' scores on the Secord-Jourard Body-Cathexis Scale were obtained. Then, differences of responses on the real and ideal Q-sorts were determined. The difference (distance) for each statement

was summed and squared. A Pearson Product Moment correlation, calculated using a BMD 02D statistical program, was then executed on thirty-eight pairs of Secord-Jourard and Q-sort scores. The resultant coefficient was considered to represent the validity of the Q-sort.

Determining Reliability

Reliability was established for the instrument by the test-retest correlation method. A sub-sample of twenty-eight subjects was utilized in assessing reliability. The sub-sample was identified from one high school. This was done for expediency and convenience. The school involved was selected at random from the five high schools constituting the research population. The sub-sample sorted the statements two times. A period of one month lapsed between the first and second administration of the Q-sort.

Administration of the Sort

The sort was administered to the subjects during the second and third weeks of May, 1974. Each statement was typed on a plain, white, four by six inch card. Forty decks of sixty cards were typed. Each subject was provided an answer sheet, a deck of cards, and a pencil. The sort was administered to the subjects during their regularly scheduled physical education classes. The investigator administered the Q-sort to all the subjects so that the testing procedures were standardized throughout the data gathering process. The retest for the twenty subjects that participated in the reliability sub-sample was given by the students' regular physical education instructor during

June of 1974. The instructor and her students were already familiar with the testing procedure inasmuch as they had taken the test under the writer's direction in May.

Two administrations of the sort were needed to obtain the necessary data. During the first administration each subject was directed to read the body-image statements and arrange them on the forced-choice continuum in a manner which described how she perceived her real self or what she felt her real body was like. A yellow colored answer sheet was provided to record the responses of the real self sort. After one week had lapsed, the subjects were asked to perform the second sorting task. During this administration, each student was directed to describe her ideal self or how she ideally would like her body to be like. A blue colored answer sheet was provided to record the responses of the ideal self sort.

Scoring and Tabulation of Responses

A tabulation grid was prepared on a ditto and two hundred copies were duplicated. A separate tabulation sheet was used to record the responses of each subject. See the Appendix for a copy of this form. The statement numbers were listed vertically on the tabulation sheets. There were eleven columns on the horizontal plane of the tabulation sheets. The first nine columns were numbered one to nine and represented the nine points of the continuum found on the subjects' answer sheets. The tenth and eleventh horizontal columns on the tabulation grid were the distance (D) and the distance squared (D^2) columns. The distance column recorded the number of spaces between the real response and the ideal response for each Q-statement. Real sort responses were

recorded in black ink on the tabulation sheets. Ideal sort responses were recorded in red ink on the tabulation sheets. A subject's raw score was interpreted as the sum of the D^2 column. This numerical value was then read off the nomograph in the form of a correlation coefficient. The correlation coefficient was intended to stand for the subject's final score. The nomograph was a linear regression line for prediction of correlation coefficients from the summation of D^2 values.

CHAPTER IV

ANALYSIS OF DATA

The analysis of data involved three statistical treatments. Statement means were computed from responses to the real and ideal sort administrations. Reliability and validity correlations were calculated utilizing the Pearson Product Moment method of correlation.

Descriptive Statistics

Each subject in this study (N=162) responded to the final form of the body-image Q-sort twice. During the first administration the subjects described their real bodies, e.g. the current perceptions held for themselves. One week later the Q-sort was administered to them again; during which time the Ss sorted the statements with regard to their ideal bodies or what they wished their bodies would be like. For analysis purposes, the researcher prepared a scoring grid to tabulate the real and ideal responses. A separate grid was used to record the sort responses of each student. See the Appendix for a copy of the grid.

Real Sort

Table 2 identifies the seven statements that described the subjects' bodies the "best" and the seven statements that described the subjects' bodies the "worst" according to their responses to the real sort. Seven statements are presented because they represent the extreme selections along the sort continuum. Statement numbers

TABLE 2

SEVEN "BEST" AND SEVEN "WORST"

Q-SORT STATEMENTS

REAL SORT ADMINISTRATION

Statement	Mean	S.D.	S.E.	Rank
Describes Me Best				
56	7.4622	1.4811	0.1439	1
58	6.9528	1.4953	0.1452	2
30	6.6415	1.4155	0.1375	3
47	6.6132	1.5527	0.1508	4
57	6.5471	1.5127	0.1469	5
8	6.4245	1.5178	0.1474	6
14	6.3396	1.4857	0.1443	7
Describes Me Worst				
60	2.1509	1.6142	0.1568	60
36	2.8207	1.7717	0.1721	59
13	3.4905	1.8166	0.1764	58
52	3.5943	1.4394	0.1398	57
17	3.9622	1.8512	0.1798	56
27	4.0377	1.6786	0.1630	55
25	4.0471	1.7856	0.1734	54

Scale = 1-9

N = 106

written in the "describes me best" column were assigned a value of nine. Statement numbers written in the "describes me worst" column were assigned a value of one. Means, standard deviations, standard errors and range values were computed for each of the sixty statements utilizing a BMD 01D computer program. The seven statements that described the subjects' real bodies the best according to the highest mean values included: #56, "I am concerned about my appearance" -- 7.46; #58, "I would like to improve my appearance" -- 6.95; #30, "I like the color of my hair" -- 6.64; #47, "I have a healthy body" -- 6.61; #57, "I have expressive eyes" -- 6.54; #8, "I would like to change my figure" -- 6.42; and #14, "I have nice hair" -- 6.33.

Considering that 9.00 was the highest possible mean that could be generated, the mean of 7.46 for statement #56 was regarded as high. The range between the first and seventh "describes me best" statement was only 1.1226. Only a mean difference of .6132 existed between the second and seventh highest "describes me best" statements.

The seven statements that described the total sample's real bodies the worst according to the lowest mean values were: #60, "I really don't care how I look" -- 2.15; #36, "I need to gain weight" -- 2.82; #13, "I am too thin" -- 3.49; #52, "My body looks great" -- 3.59; #17, "My hair is too curly" -- 3.96; #27, "My nose is too big" -- 4.03; and #25, "My legs are too short" -- 4.04.

Considering that 1.00 was the lowest possible mean that could be generated, the mean of 2.15 for statement #60 and 2.82 for statement #36 were extremely low values. The range between the first and seventh "describes me worst" statement was 1.8962. This value is similar to the difference between the first and seventh "describes me best"

statements for the real sort. The clustering, however, among the first and seventh "describes me worst" statements was not comparable to the clustering of the seven "describes me best" statements. Statements 36 and 60, ranked according to means as fifty-ninth and sixtieth, had a mean difference of .6698. Statements 52 and 13, ranked fifty-seventh and fifty-eighth, had a mean difference of .1038. Statements 25, 27 and 17 ranked fifty-fourth to fifty-sixth had a mean difference of only .0849.

It was evident from the seven "describes me best" statements that the subjects were concerned about their general personal appearance and desired to improve it. The positive "describes me best" statements of the real sort suggested satisfaction with the health of their real bodies. Responses also indicated their perceptions of having nice hair and expressive eyes. The seven "describes me worst" extreme responses from the real sort, suggest that the subjects were very concerned about their appearance as "I really don't care how I look" was ranked sixtieth among the statements. From these "worst" statements it can be concluded that the subjects believed they did not need to gain any weight and that their real bodies did not "look great."

Ideal Sort

Means, standard deviations, and standard errors were computed for each of the sixty statements from the subjects' responses to the ideal sort. Table 3 presents the seven statements perceived by the subjects as describing their ideal bodies the best and the seven statements perceived as describing their ideal bodies the worst. The seven statements that described the total sample's ideal bodies the best, according

TABLE 3

SEVEN "BEST" AND SEVEN "WORST"

Q-SORT STATEMENTS

IDEAL SORT ADMINISTRATION

Statement	Mean	S.D.	S.E.	Rank
Describes Me Best				
1	7.3846	1.4847	0.1373	1
47	7.3675	1.2359	0.1143	2
10	7.3077	1.0294	0.0952	3
54	7.1880	1.3322	0.1232	4
59	7.1538	1.3430	0.1242	5
7	7.0598	1.1469	0.1060	6
52	6.9145	1.7249	0.1595	7
Describes Me Worst				
60	2.1795	1.7101	0.1581	60
46	3.0427	1.4287	0.1321	59
12	3.1795	1.6693	0.1543	58
28	3.2478	1.3449	0.1243	57
18	3.2906	1.3962	0.1291	56
26	3.4359	1.0371	0.0959	54.5
51	3.4359	1.3607	0.1258	54.5

Scale = 1-9

N = 117

to statement means, included: #1, "I have a nice figure" -- 7.38; #47, "I have a healthy body" -- 7.36; #10, "I have a nice complexion" -- 7.30; #54, "I am physically attractive" -- 7.18; #59, "I have a pretty smile" -- 7.15; #7, "I have beautiful eyes" -- 7.05; and #52, "My body looks great" -- 6.91. All seven of these ideal sort "describes me best" statements have high mean values. Only .4701 separates the first and seventh ranked statements. All seven statements that described the subjects' perceptions of their ideal bodies the best represented strongly desirable traits.

The seven statements that described the total sample's ideal bodies the worst included: #60, "I really don't care how I look" -- 2.17; #46, "My body embarrasses me" -- 3.04; #12, "I am overweight" -- 3.17; #28, "I don't like my body" -- 3.24; #18, "My body is out of shape" -- 3.29; #26, "My stomach sticks out" -- 3.43; and #51, "Clothes don't fit me well" -- 3.43. A mean difference of .8632 existed between the fifty-ninth and sixtieth ranked statement, while a difference of only .3932 existed between the fifty-fourth to fifty-ninth statements. Six of the seven statements representing the ideal bodies worst were negative statements referring to the whole body. Only statement 26 referred to a specific body part, namely the stomach. Statements 26 and 51 had the same low mean value of 3.4359, yet the statements were markedly different in scope. Statement #26 read "My stomach sticks out" and #51 read "Clothes don't fit me well."

Comparison of Both Sorts

The fourteen statement means describing the best and worst body-image phenomena of the ideal sort were more closely clustered than the

fourteen statement means describing the best and worst body-image phenomena of the real sort. In general the sixty Q-statements had low standard deviations and standard errors from the means on both the real and ideal sorts. Real and ideal body perceptions were markedly disparate for this particular sample. Halo effects and social desirability contaminations were not noted by the author. The manner in which the subjects described their "real" bodies did not appear to be influenced or colored by their perceptions of their "ideal" bodies. Halo effects and/or social desirability can account for strong similarities between subjects real and ideal perceptions of self-referenced statements. None of this was evidenced, but without any testing of the former, no concrete interpretation can be offered for the strong disparities between the real and ideal statement means.

Only three statements overlapped in the extreme seven "describes me best" or "describes me worst" statements of the real and ideal sorts. The forty-seventh statement, "I have a healthy body" was one of the seven "describes me best" statements for both the real and ideal sort. The sixtieth statement, "I really don't care how I look" was common to both the real and ideal sorts as one having the lowest mean value of all the "describes me worst" statements. Statement #52, "My body looks great," which the subjects rated as one of the seven statements that described their real bodies the least was one of the seven statements that described their ideal bodies the best. A complete list of the statement means, standard deviations and standard errors for both the real and ideal sort administrations is presented in the Appendix. Calculating the statement means was important for two reasons. The writer was interested in which statements described

the subjects real and ideal bodies the best and the least. The writer was also interested in identifying statements that needed to be thrown out or revised before wide-spread use of the body-image Q-sort can be recommended.

Validity

Judges Rating

Validity was measured for the instrument in two steps. First, the original pool of 100 body-image Q-statements was submitted to a seven member jury of experts for evaluation. A Q-statement was eligible for retention in the final form of the body-image Q-sort if six out of the seven judges viewed the statement as appropriately measuring some given aspect of the body-image trait-universe. Seventy-one statements met this criterion and sixty were chosen for inclusion in the final form of the Q-sort.

Comparison with Secord-Jourard

Content validity was further established for the instrument by comparison of subjects responses with another body-image instrument that has been used extensively by psychologists and physical education researchers. This tool was the Secord-Jourard Body-Cathexis Scale. An initial sub-sample of 44 subjects was administered the 60-item body-image Q-sort and the Secord-Jourard Body-Cathexis Scale. Six of the answer sheets were discarded due to duplicate answers or incomplete responses. A Pearson Product Moment correlation was calculated from the remaining 38 pairs of scores utilizing a BMD 02D statistical program. The validity coefficient obtained for the body-image Q-sort, employing procedures described in the previous chapter, was .5609. It

may be noted here that this moderately positive correlation between scores on the Q-sort and scores on the Secord-Jourard scale could be due to the fact that the two instruments are measuring similar but not identical phenomena. A validity coefficient of .5609 would be considered questionable for tests measuring student performance in the psychomotor and cognitive learning domains (Barrow and McGee, 1971, p. 38). However, the .5609 value obtained for the Q-sort developed in this study, may be viewed as adequate considering the nature of the data. Behavioral phenomena or learning/valuing behaviors within the affective domain of learning are considered to be less static than skill and cognitive behaviors. Behavioral phenomena tend to be more intangible than other forms of learning and thus make affective measurement tools and techniques less statistically precise. Interpretations of the validity of other instruments designed to measure such concepts are often considered to be valid if their coefficients of correlation are higher than .50.

Reliability

Reliability was assessed for the instrument by the test-retest correlation method. An initial sub-sample of twenty-eight subjects was utilized in establishing reliability. The sub-sample was administered the Q-sort in a two-part real and ideal sort administration during the second week of May, 1974. One month later, during the second week of June, 1974 the same group of students received the second two-part administration of the body-image Q-sort. The May administration was the test and the June administration was the retest. Four students were absent during the retest and four students turned

in answer sheets that had duplicate answers or that were incomplete. Twenty pairs of scores were analyzed using a Pearson Product Moment correlation. The reliability data were computed utilizing a Bio-Medical (BMD) 02D statistical program. A reliability coefficient of .6927 was obtained from this analysis. A Peabody C06 Bivariate Scatter Plot was also calculated from the twenty pairs of scores in order to obtain a graphic representation of the reliability data. Figure 1 illustrates the reliability correlation of the twenty pairs of test-retest scores. It should be noted that one subject's score was markedly distinct from the clustering of the other nineteen pairs of scores. The reliability coefficient for the body-image Q-sort would likely have been over .70 had this one extreme pair of scores been disregarded.

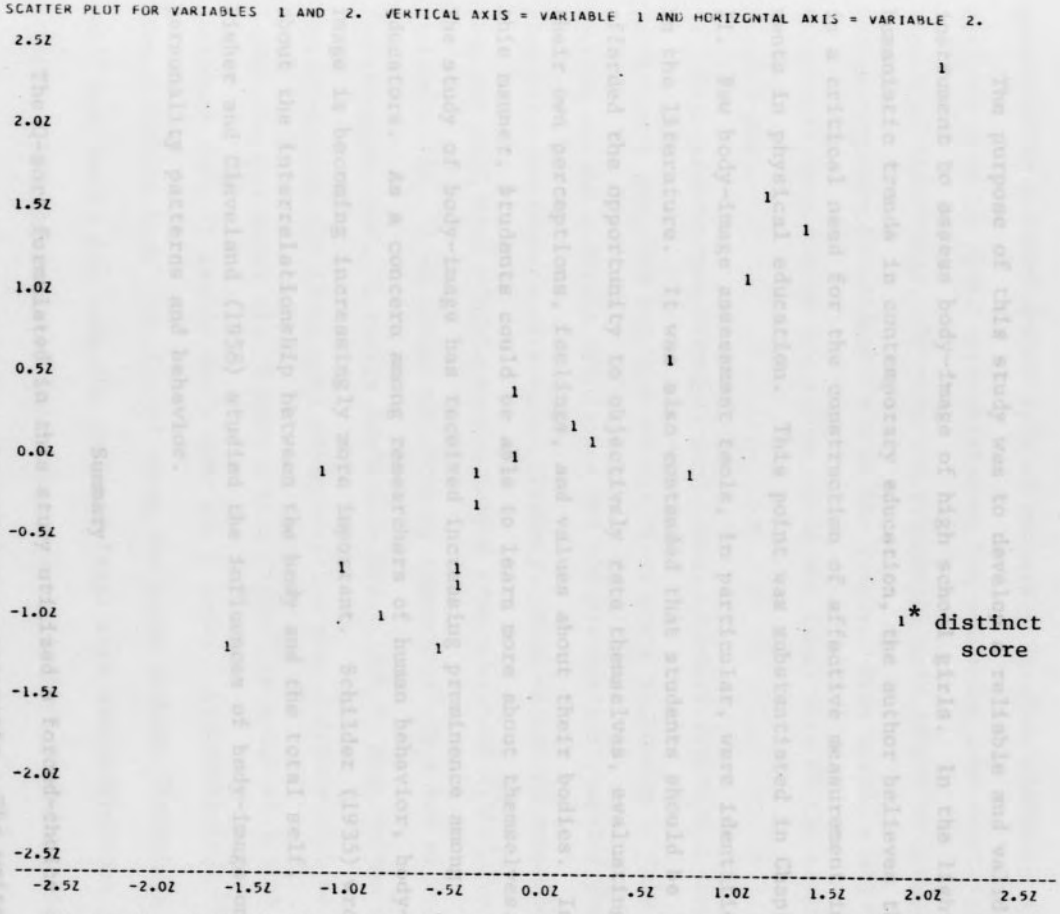

Figure 1. Peabody Scatter Plot Depicting the Sort-Resort Reliability Data.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to develop a reliable and valid instrument to assess body-image of high school girls. In the light of humanistic trends in contemporary education, the author believes there is a critical need for the construction of affective measurement instruments in physical education. This point was substantiated in Chapter II. Few body-image assessment tools, in particular, were identified in the literature. It was also contended that students should be afforded the opportunity to objectively rate themselves, evaluating their own perceptions, feelings, and values about their bodies. In this manner, students could be able to learn more about themselves. The study of body-image has received increasing prominence among educators. As a concern among researchers of human behavior, body-image is becoming increasingly more important. Schilder (1935) wrote about the interrelationship between the body and the total self. Fisher and Cleveland (1958) studied the influences of body-image on personality patterns and behavior.

Summary

The Q-sort formulated in this study utilized a forced-choice format and consisted of sixty self-reference statements. The writer talked with and interviewed high school girls enrolled at Ben L. Smith High School in Greensboro, North Carolina about perceptions of their

own bodies. The responses generated by these students were used to construct 70 of the original 100 body-image Q-statements.

It was assumed that the initial pool of 100 Q-statements adequately represented the trait-universe of body-image. These statements were submitted to a seven member jury of experts. The jury evaluated the statements as to their appropriateness for measuring some specific aspect of body-image. Seventy-one statements were judged as acceptable and appropriate by at least six of the judges. From these, sixty statements were chosen for inclusion in the final form of the body-image Q-sort.

Statement means, standard deviations, standard errors and range values were computed for each of the final sixty statements. This portion of the analysis utilized a BMD 01D statistical computer program for measurements of central tendency. Mean values of responses from the real sort administration ranged from a high of 7.4622 for statement #56, "I am concerned about my appearance" to a low of 2.1509 for statement #60, "I really don't care how I look." Mean values of responses from the ideal sort administration ranged from a high of 7.3846 for statement #1, "I have a nice figure" to a low of 2.1795 for statement #60, "I really don't care how I look." Statement #47, "I have a healthy body" was listed among the seven highest "describes me best" statements for both the real and ideal sort administrations. Statement #60 received the lowest mean value for both administrations.

The seven statements that described the subjects' "real" bodies the best showed perceptions of mild inadequacy or dissatisfaction about one's personal appearance. The seven statements that described the subjects' "ideal" bodies the best illustrated feelings of having

a nice figure, a healthy body, a nice complexion and smile, beautiful eyes, and a great looking body. The seven statements that described the subjects' "real" bodies the worst indicated a concern for how one looks, a wish that one's body could look great and no need to gain weight. The seven statements representing the worst description of subjects' "ideal" bodies suggested that their ideal bodies would not embarrass them, they would like their bodies and they would care about their personal appearance.

Validity was established for the instrument in two steps. Following the evaluation of the appropriateness of the statements, 38 pairs of subjects' scores were statistically compared. The 38 subjects involved had a score derived from the body-image Q-sort and a score from the Secord-Jourard Body-Cathexis Scale. A validity coefficient was obtained by correlating the difference between the real and ideal sorts (sum of the distance squared) with the same subjects' scores on the Secord-Jourard Body-Cathexis Scale. Utilizing a BMD 02D statistical program, the resultant Pearson Product Moment correlation coefficient was .5609. This moderate but not highly positive correlation could be explained by two factors. First, it is possible that the body-image Q-sort developed in this study and the Secord-Jourard Body-Cathexis Scale measure similar but not identical concepts or entities. Secondly, the high standard errors of means obtained for some of the statements could have adversely influenced the resulting correlation. Obviously, further refinement of the sort statements is indicated.

Reliability was established for the instrument utilizing a test-retest method of correlation. Twenty pairs of scores were analysed using a BMD 02D statistical computer program based on a Pearson

Product Moment data formula. The reliability coefficient obtained for the instrument was .6927.

Conclusions

A forced-choice, 60-item Q-sort was designed to assess body-image of high school girls. This instrument is considered to be an objective, self-evaluative tool which has the potential to help high school girls understand their own body-images. The use of the Q-sort offers the opportunity for students to consciously focus on their feelings and perceptions about their bodies. It was concluded that a reliable and valid Q-sort was developed by the present research. Moderate, but adequate reliability and validity was established for the instrument, especially in comparison with criteria accepted for other affective tools.

Recommendations for Further Study

Statement means, standard deviations and standard errors as reported in Appendix D, should be carefully studied. Some of the statements need to be revised or deleted from the sort. Statements rated by six of the seven judges as acceptable but not included in the final form of the Q-sort, could be substituted in the revised form in place of questionable statements. Following any revision of the Q-sort, test reliability and validity would need to be assessed again.

If test reliability for an improved instrument were to be established through the test-retest method, it is recommended that a sample size of more than twenty pairs of scores be used. The addition of more than 60 statements for the revision is not recommended. A sort that is 75-100 statements long would not be administratively feasible

for most public school instructional situations. An increase in the number of items contained in the sort may increase the instrument's reliability but would prove tedious for many high school students. The sorting experience may thus become less meaningful and enjoyable for the students.

Validity for the revision of the Q-sort would need to be established. It is recommended that another previously validated body-image tool besides the Secord-Jourard Body-Cathexis Scale be used. Validity for the revised instrument might be higher if compared with the Doudlah Body-Image Statements or other types of tools.

The Q-sort developed in this study was designed so that the tool could be utilized in secondary school class settings. To facilitate such use and especially to expedite the interpretation of student sort responses, a nomograph was constructed for such purposes. The purpose of the instrument is to aid in determining each subject's final score in the sorting task. The nomograph was a linear regression line for estimation of correlation coefficients from the summation of D^2 values. The nomograph was designed in the manner suggested by Cohen (1957). The following formula was utilized in developing the nomograph: $r = 1 - \frac{\Sigma D^2}{2N\sigma^2 \text{ or } K}$

In this equation the numerator is the sum of the D^2 values and the denominator is two times the number of statements in the Q-sort times the variance of the forced frequency distribution of scale values (Cohen, 1957, p. 138). Since each subject will have identical means and standard deviations due to the forced-choice design, the

denominator in the equation is a fixed value or a constant -- symbolized by "K". The nomograph and directions for its use are presented in Appendix D.

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APPENDIX

APPENDIX A

NAMES OF THE JUDGES

1. Dr. Rosemary McGee	University of North Carolina at Greensboro
2. Dr. E. Doris McKinney	University of North Carolina at Greensboro
3. Dr. Robberta Mesenbrink	Greensboro, N. C. Public Schools
4. Ms. Gladys Smith	Greenville, S. C. Public Schools
5. Dr. Ray Vincent	University of North Carolina at Greensboro
6. Mr. Charles Walters	Greensboro, N. C. Public Schools
7. Ms. Christine Whitehead	Detroit Public Schools

DIRECTIONS TO THE JUDGES

Please make a judgment about the following statements insofar as they may be considered appropriate to the psychological construct, BODY IMAGE. Your evaluation should be based on your opinion of the extent to which some aspect of the body-image concept is represented within the meaning and wording of each statement.

If an aspect of body-image is adequately represented, place a check in the column beside the statement marked ACCEPTABLE. If you consider a statement is not associated with the body-image construct, please indicate this by marking the column UNACCEPTABLE. If the meaning or the wording of a statement is unclear, mark the statement as undecided. It would be helpful if you assign the latter classification only if you are unable to make a firm decision.

The statements have been developed for use by high school girls to help them describe and consider their own body-image concepts.

I would appreciate receiving the evaluations by Friday, April 12, 1974. Thank you for your time and cooperation.

ORIGINAL BODY-IMAGE STATEMENTS

	ACCEPTABLE	UNACCEPTABLE	UNDECIDED
1. I have a nice figure.	___	___	___
2. I like my figure.	___	___	___
3. I have skinny legs.	___	___	___
4. I am too short.	___	___	___
5. I have big thighs.	___	___	___
6. I have big feet.	___	___	___
7. I have beautiful eyes.	___	___	___
8. I would like to change my figure.	___	___	___
9. I have skinny arms.	___	___	___
10. I am too tall.	___	___	___
11. I have a nice complexion.	___	___	___
12. I like my body.	___	___	___
13. I am overweight.	___	___	___
14. I am too thin.	___	___	___
15. I have nice hair.	___	___	___
16. I have big hips.	___	___	___
17. I am flat chested.	___	___	___
18. I have bad teeth.	___	___	___
19. I wear clothes well.	___	___	___
20. My hair is too curly.	___	___	___
21. I have problems with elimination.	___	___	___
22. I like my waistline.	___	___	___
23. My body is out of shape.	___	___	___

	ACCEPTABLE	UNACCEPTABLE	UNDECIDED
24. I wish I was stronger.	____	____	____
25. I am too big.	____	____	____
26. I have a big appetite.	____	____	____
27. I wish I had nice teeth.	____	____	____
28. I have nice legs.	____	____	____
29. I eat too much.	____	____	____
30. I wish I was smaller.	____	____	____
31. I need to build up my endurance.	____	____	____
32. My face is too round.	____	____	____
33. I wish I could change my whole figure.	____	____	____
34. My legs are too short.	____	____	____
35. My stomach sticks out.	____	____	____
36. I need to do more exercises.	____	____	____
37. My nose is too big.	____	____	____
38. I am in excellent health.	____	____	____
39. I need to go on a diet.	____	____	____
40. I don't like my body.	____	____	____
41. I like my arms.	____	____	____
42. I like the color of my hair.	____	____	____
43. I hate my nose.	____	____	____
44. I wish I had a better complexion.	____	____	____
45. My waistline is too big.	____	____	____
46. My hair doesn't have any body.	____	____	____
47. I have beautiful hands.	____	____	____

	ACCEPTABLE	UNACCEPTABLE	UNDECIDED
48. I get sick a lot.	____	____	____
49. I wish I was taller.	____	____	____
50. I need to gain weight.	____	____	____
51. I wish I had a different body.	____	____	____
52. I wish I didn't have freckles.	____	____	____
53. I need stronger muscles.	____	____	____
54. My neck is too short.	____	____	____
55. I am the right size.	____	____	____
56. My nose is too long.	____	____	____
57. I like my teeth.	____	____	____
58. I have ugly knees.	____	____	____
59. I don't like my fingernails.	____	____	____
60. I am not very strong.	____	____	____
61. My body makes me self-conscious.	____	____	____
62. I have a pretty face.	____	____	____
63. I have nice hips.	____	____	____
64. I have good posture.	____	____	____
65. I have weak ankles.	____	____	____
66. My body embarrasses me.	____	____	____
67. I catch cold easily.	____	____	____
68. I like to try on new clothes.	____	____	____
69. I have a healthy body.	____	____	____
70. My waist is too long.	____	____	____
71. I wish I didn't have to wear glasses.	____	____	____

	ACCEPTABLE	UNACCEPTABLE	UNDECIDED
72. I have round shoulders.	___	___	___
73. I eat all the time.	___	___	___
74. I get nervous a lot.	___	___	___
75. I have flat feet.	___	___	___
76. I perspire heavily.	___	___	___
77. I don't like my hair.	___	___	___
78. I have trouble getting enough sleep.	___	___	___
79. I like my voice.	___	___	___
80. I frequently have backaches.	___	___	___
81. I get tired easily.	___	___	___
82. My fingers are too short.	___	___	___
83. I often have headaches.	___	___	___
84. My voice is too loud.	___	___	___
85. Clothes don't fit me well.	___	___	___
86. I wish I could do something with my hair.	___	___	___
87. I have a poor appetite.	___	___	___
88. My body looks great.	___	___	___
89. I am satisfied with my appearance.	___	___	___
90. I wish I had more energy to do things I like to do.	___	___	___
91. I am physically attractive.	___	___	___
92. I am poised.	___	___	___
93. I enjoy being physically active.	___	___	___
94. My body can do many things.	___	___	___

	ACCEPTABLE	UNACCEPTABLE	UNDECIDED
95. I am concerned about my appearance.	____	____	____
96. I have expressive eyes.	____	____	____
97. I spend a great deal of time on personal grooming.	____	____	____
98. I would like to improve my appearance.	____	____	____
99. I have a pretty smile.	____	____	____
100. I really don't care how I look.	____	____	____

APPENDIX B

FINAL BODY-IMAGE STATEMENTS

1. I have a nice figure.
2. I like my figure.
3. I have skinny legs.
4. I am too short.
5. I have big thighs.
6. I have big feet.
7. I have beautiful eyes.
8. I would like to change my figure.
9. I have skinny arms.
10. I have a nice complexion.
11. I like my body.
12. I am overweight.
13. I am too thin.
14. I have nice hair.
15. I have big hips.
16. I am flat chested.
17. My hair is too curly.
18. My body is out of shape.
19. I am too big.
20. I wish I had nice teeth.
21. I have nice legs.
22. I wish I was smaller.
23. My face is too round.
24. I wish I could change my whole figure.

25. My legs are too short.

26. My stomach sticks out.

27. My nose is too big.

28. I don't like my body.

29. I like my arms.

30. I like the color of my hair.

31. I hate my nose.

32. I wish I had a better complexion.

33. My waistline is too big.

34. I have beautiful hands.

35. I wish I was taller.

36. I need to gain weight.

37. I wish I had a different body.

38. I need stronger muscles.

39. I am the right size.

40. I like my teeth.

41. I have ugly knees.

42. My body makes me self-conscious.

43. I have nice hips.

44. I have good posture.

45. I have weak ankles.

46. My body embarrasses me.

47. I have a healthy body.

48. I have round shoulders.

49. I like my voice.

50. My voice is too loud.

51. Clothes don't fit me well.

52. My body looks great.

53. I am satisfied with my appearance.

54. I am physically attractive.

55. My body can do many things.

56. I am concerned about my appearance.

57. I have expressive eyes.

58. I would like to improve my appearance.

59. I have a pretty smile.

60. I really don't care how I look.

ANSWER SHEET

Name: _____
High School: _____
Class Hour: _____

Describes Me Best	Describes Me Very Well	Describes Me Well	Describes Me Rather Well	Somewhat Like Me	Describes Me Rather Poorly	Describes Me Poorly	Describes Me Very Poorly	Describes Me Worst
____	____	____	____	____	____	____	____	____
____	____	____	____	____	____	____	____	____
	____	____	____	____	____	____	____	
	____	____	____	____	____	____	____	
	____	____	____	____	____	____	____	
		____	____	____	____	____		
		____	____	____	____	____		
			____	____	____			
			____	____	____			
				____				
				____				
				____				
				____				
				____				

No	1	2	3	4	5	6	7	8	9	D	D^2	No	1	2	3	4	5	6	7	8	9	D	D^2
1												31											
2												32											
3												33											
4												34											
5												35											
6												36											
7												37											
8												38											
9												39											
10												40											
11												41											
12												42											
13												43											
14												44											
15												45											
16												46											
17												47											
18												48											
19												49											
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22												52											
23												53											
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25												55											
26												56											
27												57											
28												58											
29												59											
30												60											

D^2 =

APPENDIX C

Name _____

School _____

SECORD-JOURARD BODY-CATHEXIS SCALE

Directions: On the following pages are listed a number of things characteristic of yourself or related to you. You are asked to indicate which things you are satisfied with exactly as they are, which things you worry about and would like to change if it were possible, and which things you have no feelings about one way or the other.

Consider each item listed below and encircle the number which best represents your feelings according to the following scale:

1. Have strong feelings and wish change could somehow be made.

2. Don't like, but can put up with.

3. Have no particular feelings one way or the other.

4. Am satisfied.

5. Consider myself fortunate.

hair	1	2	3	4	5
facial hair	1	2	3	4	5
appetite	1	2	3	4	5
hands	1	2	3	4	5
distribution of hair over body	1	2	3	4	5
nose	1	2	3	4	5
fingers	1	2	3	4	5
elimination	1	2	3	4	5
wrists	1	2	3	4	5
breathing	1	2	3	4	5

1. Have strong feelings and wish change could somehow be made.

2. Don't like, but can put up with.

3. Have no particular feelings one way or the other.

4. Am satisfied.

5. Consider myself fortunate.

waist	1	2	3	4	5
energy level	1	2	3	4	5
back	1	2	3	4	5
ears	1	2	3	4	5
chin	1	2	3	4	5
exercise	1	2	3	4	5
ankles	1	2	3	4	5
neck	1	2	3	4	5
shape of head	1	2	3	4	5
body build	1	2	3	4	5
profile	1	2	3	4	5
height	1	2	3	4	5
age	1	2	3	4	5
width of shoulders	1	2	3	4	5
arms	1	2	3	4	5
chest	1	2	3	4	5
eyes	1	2	3	4	5
digestion	1	2	3	4	5
hips	1	2	3	4	5
skin texture	1	2	3	4	5

APPENDIX D

RAW DATA -- VALIDITY SUB-SAMPLE

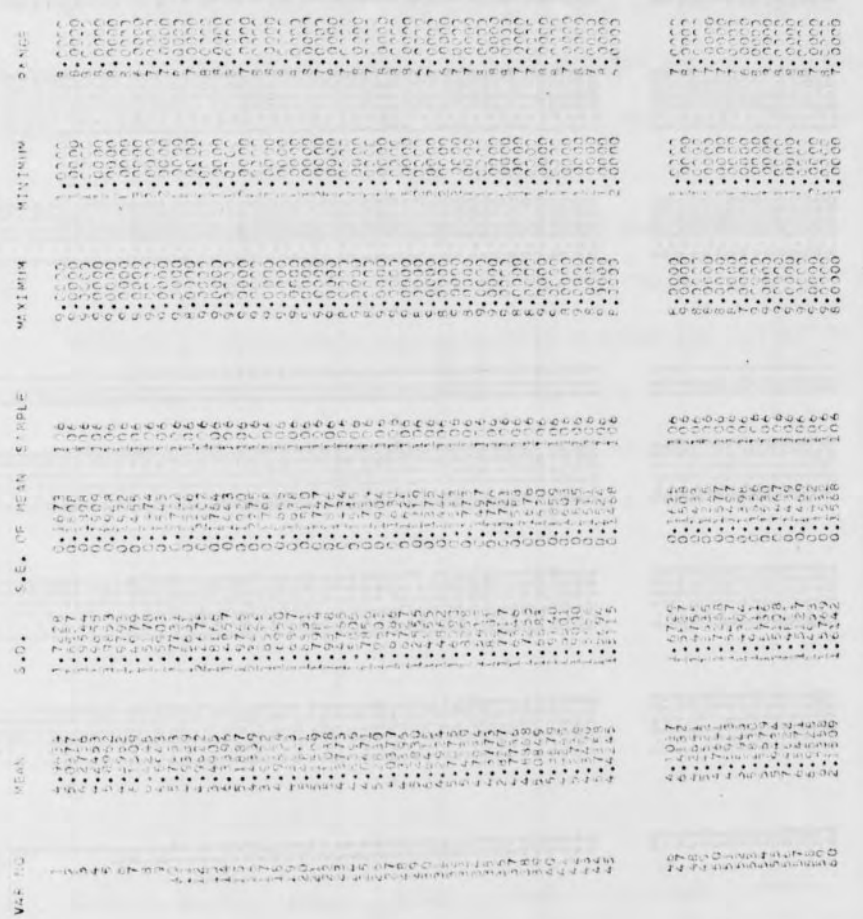
SUBJECT	Q-SORT SCORE	SECORD-JOURARD SCORE
001	362	191
002	322	189
003	276	189
004	215	188
005	176	187
006	352	182
007	339	179
008	236	179
009	456	179
010	140	177
011	154	176
012	266	175
013	174	174
014	330	169
015	210	169
016	382	169
017	326	168
018	354	167
019	480	166
020	314	164
021	300	164
022	500	162
023	278	162
024	264	161

SUBJECT	Q-SORT SCORE	SECORD-JOURARD SCORE
025	378	161
026	470	157
027	312	156
028	117	156
029	765	150
030	384	148
031	480	144
032	470	143
033	416	134
034	399	133
035	542	129
036	290	129
037	570	120
038	607	119

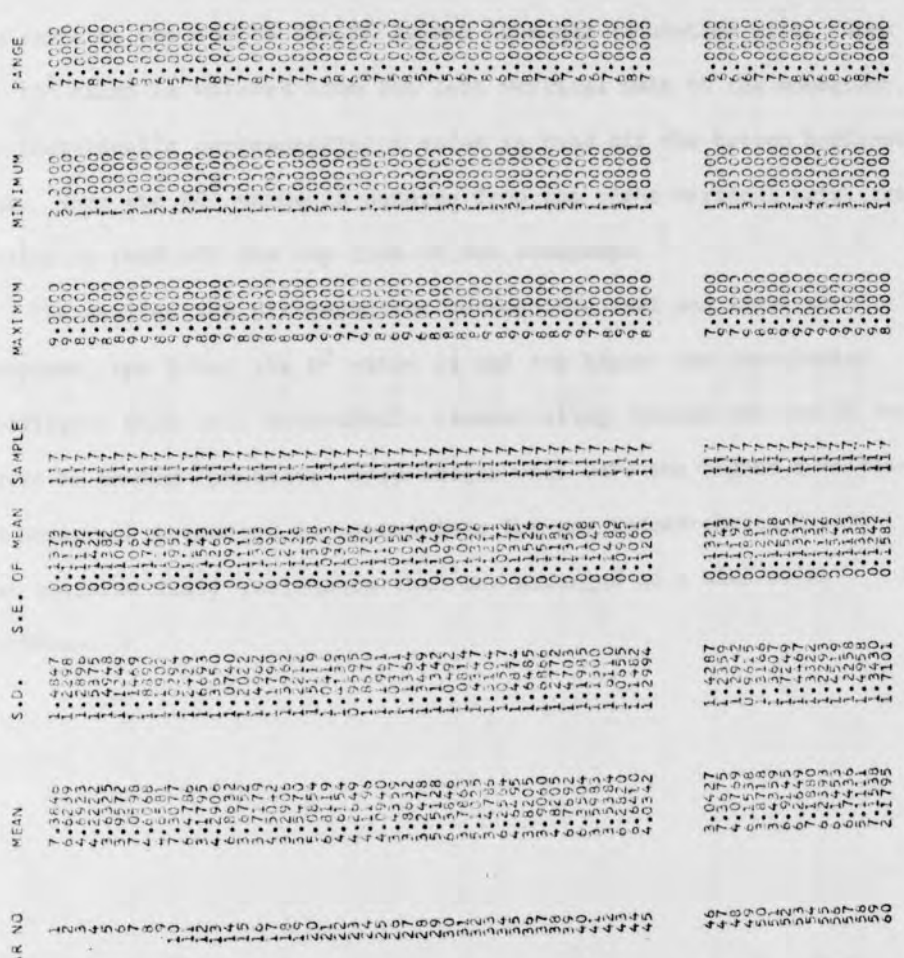
RAW DATA -- RELIABILITY SUB-SAMPLE

SUBJECT	SORT	RESORT
001	236	262
002	192	238
003	258	138
004	266	282
005	427	503
006	568	612
007	154	584
008	308	290
009	185	154
010	135	078
011	332	399
012	152	182
013	452	470
014	253	422
015	254	254
016	294	336
017	388	460
018	179	243
019	130	229
020	276	350

Computer Output From the Real Sort Data



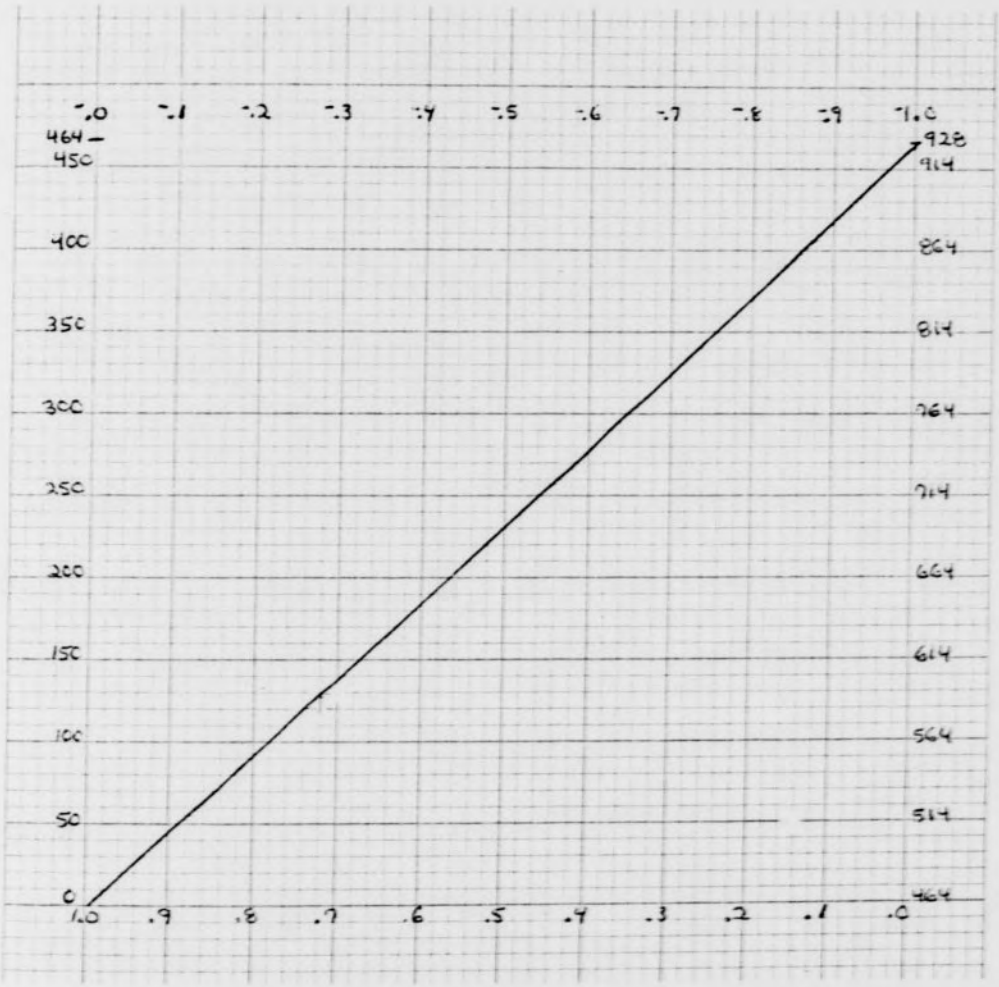
Computer Output From the Ideal Sort Data



DIRECTIONS FOR USING THE NOMOGRAPH

First, each student's raw score must be computed. A student's raw score is the sum of the D^2 column from her tabulation grid. When the ΣD^2 value is entered from the left vertical axis of the nomograph, the individual's corresponding r value is read off the bottom horizontal line. When the ΣD^2 value is entered from the right vertical axis, the r value is read off the top line of the nomograph.

The smaller the discrepancies between the real and ideal sort responses, the lower the D^2 value is and the higher the correlation coefficient will be. Individuals demonstrating through the use of the Q-sort as having "positive" body-images will have the higher r values. The nomograph presented is appropriate for any forced-choice Q-sort that contains sixty statements that are arranged on a nine-point continuum.


.0
.1
.2
.3
.4
.5
.6
.7
.8
.9
1.0
464
450
400
350
300
250
200
150
100
50
0
928
914
864
814
764
714
664
614
564
514
464
1.0
.9
.8
.7
.6
.5
.4
.3
.2
.1
.0

NOMOGRAPH